What is claimed is:

1. An open substrate platform comprising:

a slide element having opposing top and bottom surfaces,

wherein the top surface of the slide contains one or more depressions with a defined area for sample analysis,

wherein the bottom surface of the slide contains one or more depressions opposing the depression on the top surface, and

wherein the bottom surface of the slide further comprises at least one set of paired finger indentations for use in removing the slide from a flat surface.

2. The open substrate platform of claim 1, further comprising a coverslip,

wherein the coverslip is capable of the analysis area on the top surface of the slide, and

wherein the coverslip is constructed of a material which is more hydrophilic than the material from which the slide is constructed.

3. The open substrate platform of claim 1, further comprising a coverslip,

wherein the coverslip is capable of the analysis area on the top surface of the slide, and

wherein the coverslip is constructed of a material which has the same hydrophilicity as the material from which the slide is constructed.

4. An open substrate platform comprising:

a slide element having opposing top and bottom surfaces, the slide element preferably being substantially rectangular and formed from a plastic material, and

wherein the top surface of the slide is comprised of a defined area for sample analysis, and

wherein the bottom surface of the slide contains one or more depressions; wherein, the bottom surface of the slide further comprises at least one set of paired finger indentations for use in removing the slide from a flat surface.

5. The substrate platform of claims 1 or 4, wherein the substrate platform further comprises a mark used to identify the slide.

6. The substrate platform of claim 5, wherein the mark is a bar code.

7. The substrate platform of claims 1 or 4, wherein the slide is constructed from one or more materials of polycarbonate or Topas.

8. The substrate platform of claims 1 or 4, wherein the slide is constructed from plastic.

9. The substrate platform of claims 1 or 4, wherein the slide has a flatness of less than or equal to about 20 μm, wherein the flatness does not deviate on a slide and between slides, more than 1 μm per millimeter.

10. The substrate platform of claims 1 or 4, wherein the slide has a roughness of about an RA of less than about 100 nm.

11. The substrate platform of claims 1 or 4, wherein the slide has a roughness with an RA of less than about 50 nm.

12 The substrate platform of claims 1 or 4, wherein the slide has a roughness with an RA of less than about 20 nm.

13. The substrate platform of claims 1 or 4, wherein the surface of the slide is treated so as to increase the binding capacity of the slide.

14. The substrate platform of claims 1 or 4, wherein the slide is constructed of a material which is resistant to temperatures over a range of -5°C to +105°C.

15. The substrate platform of claims 1 or 4, wherein the slide is constructed of a material which is resistant to pH over a range of pH=1 to pH=13.

16. The substrate platform of claims 1 or 4, which is dimensioned so as to be compatible with equipment capable of handling a standard microscope slide.

17. The substrate platform of claims 1 or 4, which is constructed using injection molding.

19. The substrate platform of claims 1 or 4, which further comprises immobilized nucleic acid sequences.

20. The substrate platform of claim 19, wherein the nucleic acid sequences are modified.

21. The substrate platform of claim 20, wherein the nucleic acid sequences contain at least one modified nucleotide.

22. The substrate platform of claim 20, wherein the nucleic acid sequences contain at least one locked nucleoside analogue.

24. The substrate platform of claim 20, wherein the nucleic acid sequences are completely composed of locked nucleoside analogues.

25. The substrate platform of claim 20, wherein the nucleic acid sequences contain at least one modified internucleoside linkage.

26. The substrate platform of claim 20, wherein the nucleic acid sequences contain at least one phosphorothioate internucleoside linkage.

27. The substrate platform of claim 20, wherein all of the internucleoside linkages of the nucleic acid sequences are phosphorothioate.

28. The substrate platform of claim 20, wherein the nucleic acid sequences comprise at least one modified nucleotide and at least on modified internucleoside linkage.

29. The substrate platform of claim 19, wherein each immobilized nucleic acid with a unique sequence is located at a defined position.

30. The substrate platform of claim 29, which comprises at least 100 unique sequences per cm^2.

31. The substrate platform of claim 29, which comprises at least 400 unique sequences per cm^2.

32. The substrate platform of claim 29, which comprises at least 900 unique sequences per cm^2.

33. The substrate platform of claim 29, wherein each immobilized nucleic acid contains from about 500 to about 1000 nucleotides.

34. The substrate platform of claim 29, wherein each immobilized nucleic acid contains from about 100 to about 500 nucleotides.

35. The substrate platform of claim 29, wherein each immobilized nucleic acid contains from about 10 to about 100 nucleotides.

36. The substrate platform of claim 29, wherein each immobilized nucleic acid contains from about 2 to about 30 nucleotides.

37. The substrate platform of claim 19, wherein the nucleic acid sequences are immobilized onto the slide using a photochemical linker.

38. The substrate platform of claim 37, wherein the nucleic acid sequences are immobilized onto the slide using anthraquinone.

39. The substrate platform of claim 19, wherein a linker connects either the 5' or 3' ends of the nucleic acid sequences to the surface of the slide.

40. The substrate platform of claim 19, wherein the nucleic acid sequences are immobilized onto the surface of the slide after synthesis.

41. The substrate platform of claim 19, wherein the nucleic acid sequences are synthesized on the surface of the slide.

42. The substrate platform of claim 19, wherein the nucleic acid sequences are double stranded.

43. The substrate platform of claim 19, wherein the nucleic acid sequences are single stranded.

44. The substrate platform of claims 1 or 4, which further comprises immobilized polypeptides.

45. The substrate platform of claim 44, wherein the immobilized polypeptides contains at least one modification selected from the group consisting of phosphorylation or glycosylation.

46. The substrate platform of claim 44, wherein each immobilized polypeptide with a different amino acid sequence is located at a defined position.

47. The substrate platform of claim 46, which comprises at least 100 unique polypeptide sequences per cm^2.

48. The substrate platform of claim 46, which comprises at least 400 unique polypeptide sequences per cm^2.

49. The substrate platform of claim 46, which comprises at least 900 unique polypeptide sequences per cm^2.

50. The substrate platform of claim 44, wherein the polypeptides are immobilized onto the slide using a photochemical linker.

51. The substrate platform of claim 44, wherein the polypeptides are immobilized onto the slide using anthraquinone.

52. The substrate platform of claim 44, wherein a flexible linker connects either the amino-termini or carboxy-termini of the polypeptides to the surface of the slide.

53. The substrate platform of claim 44, wherein the polypeptides are synthesized on the surface of the slide.

54. The substrate platform of claim 1 or 4, wherein the analysis area is modified to facilitate attachment and growth of cells.

55. A method for identifying a nucleic acid sequence capable of binding to a biomolecule comprising:

immobilizing each unique nucleic acid sequence from a library of nucleic acid sequences onto the substrate platform of claims 1 or 4,

optionally washing the substrate platform to remove contaminants,

incubating the immobilized nucleic acid sequences with a biomolecule under conditions which are conducive to specific interaction between the biomolecule and the nucleic acid sequences,

optionally washing the substrate platform to remove any non-specifically bound biomolecules,

detecting the location of the nucleic acid sequences which bound to the biomolecule.

56. The method of claim 55, wherein the biomolecule is a nucleic acid sequence.

57. The method of claim 55, wherein the biomolecule is a polypeptide.

58. The method of claim 55, wherein the location of the nucleic acid sequences which bound to the biomolecule is detected by virtue of a tag on the biomolecule.

59. The method of claim 58, wherein the tag on the biomolecule is a detectable moiety.

60. A method for identifying a polypeptide capable of binding to a biomolecule comprising:

immobilizing each unique polypeptide from a library of polypeptides onto the substrate platform of claims 1 or 4,

optionally washing the substrate platform to remove contaminants,

incubating the immobilized polypeptides with a biomolecule under conditions which are conducive to specific interaction between the biomolecule and the polypeptides,

optionally washing the substrate platform to remove any non-specifically bound biomolecules,

detecting the location of the polypeptides which bound to the biomolecule.

61. The method of claim 60, wherein the biomolecule is a nucleic acid sequence.

62. The method of claim 61, wherein the biomolecule is a polypeptide.

63. The method of claim 61, wherein the biomolecule is a multimeric polypeptide.

64. The method of claim 61, wherein the biomolecule is an antibody.

65. The method of claim 61, wherein the biomolecule is a receptor.

66. The method of claim 61, wherein the biomolecule is a hormone.

67. The method of claim 61, wherein the biomolecule is a drug or drug candidate.

68. The method of claim 61, wherein the location of the polypeptides which bound to the biomolecule is detected by virtue of a tag on the biomolecule.

69. The method of claim 68, wherein the tag on the biomolecule is a fluorescent tag.

70. A method for sample analysis comprising:
applying a sample to the substrate platform of claims 1 or 4; and
evaluating the sample.

71. The method of claim 70, wherein the sample is a liquid.

72. The method of claim 70, wherein the sample is a solid.

73. Use of the substrate platform of claims 1 or 4 for sample analysis.